# Discharge to Community-Post Acute Care (DTC-PAC) Long Term Care Hospital (LTCH) Measure

## Technical Specification Report

Prepared for

**Center for Clinical Standards and Quality**
**Centers for Medicare & Medicaid Services**
7500 Security Boulevard
Baltimore, MD 21244-1850

Prepared by

**RTI International**
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**September 2026**

RTI INTERNATIONAL

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# Contents

## Exhibits

# Introduction

This report presents the technical measure specifications for the refined Discharge to Community-Post Acute Care (DTC-PAC) Long Term Care Hospital (LTCH) measure.

Section 1 provides an overview of the measure including a measure description, a history of the original version of this measure and the rationale for and summary of the refinements in the current measure, and the purpose and rationale for the original and current versions of the measure.

Section 2 describes the measure specifications, including the construction of the denominator and numerator, data sources, measure observation window, the risk adjustment model, and steps for calculating the final measure result.

Section 3 discusses measure testing, including the measure's reportability, variability, reliability, and validity results.

# 1. Overview

This chapter provides an overview of the updated LTCH DTC-PAC measure, including a general description of the measure, the history of the measure's development, refinements to the original measure (Section 1.1), and the purpose and rationale for the measure and refinements (Section 1.2). A more detailed explanation of the measure specifications is available in Chapter 2.

## 1.1 Measure Description

The LTCH DTC-PAC measure assesses the rate at which beneficiaries are successfully discharged to the community from the LTCH. Specifically, this measure reports an LTCH's risk-standardized rate of Medicare beneficiaries who are discharged to the community after an LTCH stay, do not have an unplanned readmission to an acute care hospital or Long-Term Care Hospital (LTCH), and remain alive during the 31 days following that discharge. Community, for this measure, is defined as home/self-care, with or without home health services.

This measure is conceptualized similarly across the multiple post-acute care settings, in terms of the definition of the discharge to community outcome, the approach to risk adjustment, and the measure calculation. Each measure is specific to the particular PAC setting (i.e., home health [HH], inpatient rehabilitation facilities [IRF], skilled nursing facilities [SNF], or long term care hospitals [LTCH]); we do not pool PAC patients/residents across settings in the measure development and calculation.

This measure calculates a risk-adjusted DTC rate for each LTCH. This is derived by first calculating a standardized risk ratio – the predicted number of LTCH stays with successful discharge to the community divided by the expected number of LTCH stays with successful discharge to the community for the same patients if treated at the average LTCH. The

standardized risk ratio is then multiplied by the mean rate of LTCH stays with successful discharge to the community in the population (i.e., all LTCH stays for Medicare fee-for-service (FFS) and Medicare Advantage patients eligible for the measure) to generate the LTCH-level standardized rate of discharge to community.

### 1.1.1 Updates to the DTC-PAC Measure to Include Medicare Advantage Beneficiaries

This Technical Specifications Report describes updates to the DTC-PAC measure to add Medicare Advantage (MA) records as a data source in addition to Medicare FFS claims. Updates related to the inclusion of MA records include:

1. Additional data sources Section 2.1
2. Updates to stay creation, Section 2.2.1
3. Modifications of the exclusion criteria to not exclude beneficiaries with MA (Part C) coverage, and to exclude stays with problematic data coming from MA records, Section 2.2.3
4. Addition of a risk adjustment covariate for Medicare Advantage (Part C) coverage at the start of the LTCH stay, Section 2.5.1.

## 1.2 Purpose/Rationale for the Measure

Discharge to home or community is an important patient-centered outcome in post-acute care because it reflects higher functional abilities and effective care transitions, and is associated with lower mortality and costs.[1,2] Across diverse patient populations, including patients with stroke, traumatic brain injury, hip fracture, cancer, and medically complex conditions, patients discharged to the community generally experience better outcomes than those discharged to institutional settings.[3,4]

[1] Patel, S. V., Arcidiacono, A., Austin, C. P., Imburgio, S., Heaton, J., DiSandro, K., Mathur, D., Besa, R., Angelo, E., Walch, B., Bakr, M., Buccellato, V., Frank, E., Hossain, M. A., & Asif, A. (2024). Improving Patient Outcomes Using Measures to Increase Discharge Rates to Home. Cureus, 16(5), e59738. https://doi.org/10.7759/cureus.59738
[2] Bardenheier, B. H., Rahman, M., Kosar, C., Werner, R. M., & Mor, V. (2021). Successful Discharge to Community Gap of FFS Medicare Beneficiaries With and Without ADRD Narrowed. Journal of the American Geriatrics Society, 69(4), 972-978. https://doi.org/10.1111/jgs.16965
[3] Singh, S., Eguchi, M., Min, S. J., & Fischer, S. (2020). Outcomes of Patients With Cancer Discharged to a Skilled Nursing Facility After Acute Care Hospitalization. J Natl Compr Canc Netw, 18(7), 856-865. https://doi.org/10.6004/jnccn.2020.7534
[4] Augustine, M. R., Intrator, O., Li, J., Lubetsky, S., Ornstein, K. A., DeCherrie, L. V., Leff, B., & Siu, A. L. (2023). Effects of a Rehabilitation-at-Home Program Compared to Post-acute Skilled Nursing Facility Care on Safety, Readmission, and Community Dwelling Status: A Matched Cohort Analysis. Med Care, 61(11), 805-812. https://doi.org/10.1097/mlr.0000000000001925

There are clinical predictors of discharge to the community, including functional status at discharge, particularly mobility, transfers, and self-care ability.[5,6,7] Greater functional improvement during post-acute care and higher rehabilitation intensity increase the likelihood of home discharge.[8,9] Specific impairments, such as lower extremity impairments, cognitive deficits, dysphagia, and incontinence, reduce the likelihood of discharge home unless targeted during rehabilitation.[10,11,12] Lower medical complexity, fewer comorbidities, and younger age are also consistently associated with better discharge outcomes.[13,14]

Non-clinical factors are equally influential. For example, the presence of a caregiver is one of the strongest predictors of discharge home, often exceeding clinical factors.[15,16] Social determinants. including housing stability, transportation access, and neighborhood vulnerability, significantly affect discharge outcomes.[17] Care gaps remain, with differences in post-acute care

[5] Andrews, A. W., & Bohannon, R. W. (2023). Functional Independence predicts patients with stroke more likely to be discharged to the community after inpatient rehabilitation. Topics in Stroke Rehabilitation, 30(4), 393-401. https://doi.org/10.1080/10749357.2022.2038834

[6] Deutsch, A., Palmer, L., Vaughan, M., Schwartz, C., & McMullen, T. (2022). Inpatient Rehabilitation Facility Patients' Functional Abilities and Validity Testing of the Standardized Self-Care and Mobility Data Elements. Arch Phys Med Rehabil, 103(6), 1070-1084.e1073. https://doi.org/10.1016/j.apmr.2022.01.147

[7] Toth, M., Palmer, L., Marino, M. E., Smith, A., Schwartz, C., Deutsch, A., & McMullen, T. (2023). Validation of the Standardized Function Data Elements among Medicare Skilled Nursing Facility Residents. J Am Med Dir Assoc, 24(3), 307-313.e301. https://doi.org/10.1016/j.jamda.2022.12.014

[8] Kumar, A., Roy, I., Warren, M., Shaibi, S. D., Fabricant, M., Falvey, J. R., Vashist, A., & Karmarkar, A. M. (2022). Impact of Hospital-Based Rehabilitation Services on Discharge to the Community by Value-Based Payment Programs After Joint Replacement Surgery. PTJ: Physical Therapy & Rehabilitation Journal, 102(4), 1-8. https://doi.org/10.1093/ptj/pzab313

[9] Kushner, D. S., Johnson-Greene, D., Felix, E. R., Miller, C., Cordero, M. K., & Thomashaw, S. A. (2023). Predictors of discharge to home/community following inpatient-rehabilitation in a US national sample of Guillain-Barre-Syndrome patients. PLoS One, 18(5), e0286296. https://doi.org/10.1371/journal.pone.0286296

[10] Ginex, V., Viganò, M., Gilardone, G., Monti, A., Gilardone, M., & Corbo, M. (2023). Predicting home discharge after inpatient rehabilitation of stroke patients with aphasia. Neuropsychol Rehabil, 33(3), 393-408. https://doi.org/10.1080/09602011.2021.2021951

[11] Shogenji, M., Yoshida, M., Sumiya, K., Shimada, T., Ikenaga, Y., Ogawa, Y., Hirako, K., & Sai, Y. (2022). Relationship between Bowel/Bladder Function and Discharge in Older Stroke Patients in Convalescent Rehabilitation Wards: A Retrospective Cohort Study. Prog Rehabil Med, 7, 20220028. https://doi.org/10.2490/prm.20220028

[12] Lee, S. W., Elsakr, C., Joung, K. M., & Ayutyanont, N. (2025). Outcomes after inpatient rehabilitation for older adults with hip fractures: A cross-sectional study. Clinical Rehabilitation, 39(1), 35-46. https://doi.org/10.1177/02692155241300647

[13] Dubin, A., Zarreii, P., Sharififar, S., Nixon, R. M., Conic, R. R. Z., Pendem, K., & Vincent, H. K. (2025). The impact of body mass index on rehabilitation outcomes after lower limb amputation. Pm r, 17(5), 539-547. https://doi.org/10.1002/pmrj.13292

[14] Porto, C. M., Wolman, D. N., Feler, J. R., Chuck, C. C., Karayi, G., Torabi, R., Moldovan, K., Furie, K. L., & Mahta, A. (2025). Predictors of Skilled Nursing Facility Length of Stay and Discharge After Aneurysmal Subarachnoid Hemorrhage. Neurohospitalist, 15(3), 257-265. https://doi.org/10.1177/19418744251323639

[15] Herbold, J., Elmohsen, E., Gutierrez, G., Helgesen, M., & Babyar, S. (2023). Prediction of Discharge Destination After Inpatient Rehabilitation for Stroke Using Mobility and Self-Care Assessment in Section GG of the Inpatient Rehabilitation Facility - Patient Assessment Instrument. Arch Rehabil Res Clin Transl, 5(4), 100292. https://doi.org/10.1016/j.arrct.2023.100292

[16] Li, T. K.-T., Ng, B. H.-P., Chan, D. Y.-L., Chung, R. S.-F., & Yu, K.-K. (2020). Factors predicting clinically significant functional gain and discharge to home in stroke in-patients after rehabilitation – A retrospective cohort study. Hong Kong Journal of Occupational Therapy, 33(2), 63-72. https://doi.org/10.1177/1569186120979428

[17] Bright, L., Baum, C. M., & Roberts, P. (2025). Impact of race on discharge location for stroke survivors: Associations with home discharge from a retrospective analysis. Pm r, 17(6), 638-645. https://doi.org/10.1002/pmrj.13303

access among Medicaid beneficiaries.[18] Facility-level factors, including patient safety culture and care coordination, also influence successful community discharge.[19]

Interventions that increase the likelihood of community discharge to home include:

- Increase rehabilitation intensity and focus on mobility/transfer training[8,9]
- Provide caregiver training and support, enabling safe home transitions[20]
- Enhance discharge planning and care coordination, including multidisciplinary programs and post-acute management[1,21]
- Ensure post-discharge support, such as home health care, which reduces readmissions[22]

Emerging clinical programs, such as condition-specific rehabilitation programs, more frequent dialysis in SNFs, and targeted transitional care, show promise in accelerating return home.[23,24]

Discharge to home/community is a meaningful and multifactorial outcome. The evidence shows that improving this outcome requires integrated strategies that combine intensive, function-focused rehabilitation with caregiver support, coordinated transitions, and attention to social and structural barriers. Approaches that address both clinical recovery and non-clinical determinants are most effective in increasing safe and equitable discharge to home.

### 1.2.1 Relevance of Cross-Setting Measure Development Work Under the IMPACT Act

The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT Act), enacted Oct. 6, 2014, directs the Secretary of Health and Human Services to “specify quality measures on which Post-Acute Care (PAC) providers are required under the applicable reporting provisions to submit standardized patient assessment data” in several domains, including

[18] Strelko, O., Spiro, E., Lui, A., Tarapore, P. E., Huang, M. C., Manley, G. T., Yue, J. K., & DiGiorgio, A. M. (2026). Insurance-based disparities in traumatic brain injury length of stay and discharge dispositions: A retrospective cohort analysis of the national trauma data bank. Injury, 113358. https://doi.org/10.1016/j.injury.2026.113358
[19] Guo, W., Li, Y., & Temkin-Greener, H. (2021). Community Discharge Among Post-Acute Nursing Home Residents: An Association With Patient Safety Culture? J Am Med Dir Assoc, 22(11), 2384-2388.e2381. https://doi.org/10.1016/j.jamda.2021.04.022
[20] Smith, S., Wilson, C. M., Lipple, C., Avromov, M., Maltese, J., Siwa, E., Jr., Colombo, R., & Seidell, J. W. (2020). Managing Palliative Patients in Inpatient Rehabilitation Through a Short Stay Family Training Program. Am J Hosp Palliat Care, 37(3), 172-178. https://doi.org/10.1177/1049909119867293
[21] Armstrong, D., Agovi, A. M., Gehr, A. W., Cvitanovich, M., McNamara-Pittler, E., Goodier, N., Hasty, K., Govea, A., Woods, M., & Ojha, R. P. (2026). Effects of a post-acute care management program on subsequent acute care utilization for hospitalized patients discharged to skilled nursing facilities. BMC Health Serv Res, 26(1), 177. https://doi.org/10.1186/s12913-025-13944-7
[22] Weerahandi, H., Bao, H., Herrin, J., Dharmarajan, K., Ross, J. S., Jones, S., & Horwitz, L. I. (2020). Home Health Care After Skilled Nursing Facility Discharge Following Heart Failure Hospitalization. Journal of the American Geriatrics Society, 68(1), 96-102. https://doi.org/10.1111/jgs.16179
[23] Bellin, E. Y., Hellebrand, A. M., Markis, W. T., Ledvina, J. G., Kaplan, S. M., Levin, N. W., & Kaufman, A. M. (2024). More Frequent On-Site Dialysis May Hasten Return to Home for Nursing Home Patients with End-Stage Kidney Disease. Kidney360, 5(8), 1126-1136. https://doi.org/10.34067/kid.0000000000000487
[24] Manes, M. R., Kendall, H. A., Bowden, M. G., Bailey, C. E., Paris, T., Hoertz, J. S., Shah, P., & Maher, K. (2025). Development and Evaluation of an Inpatient Rehabilitation Model of Care Tailored to Solid Organ Transplantation. Clin Transplant, 39(10), e70324. https://doi.org/10.1111/ctr.70324

medication reconciliation and resource use measures.[25] Measures developed to meet the requirements of the IMPACT Act include: Medicare spending per beneficiary, discharge to community and all-condition risk-adjusted potentially preventable readmission rates. The IMPACT Act requires the implementation of measures to address these measure domains in HHAs, SNFs, LTCHs, and IRFs.

The LTCH DTC-PAC measure was originally finalized for adoption in the LTCH Quality Reporting Program (QRP) through the FY 2017 LTCH PPS Final Rule.[26] Documentation for this measure, LTCH DTC-PAC, is available on the CMS Measures Inventory Tool website.[27]

# 2. Measure Specifications

This section describes the methodology used to construct the updated LTCH DTC-PAC measure. Section 2.1 describes the data sources used. Section 2.2 describes LTCH stay construction and measure inclusion/exclusion criteria. Sections 2.3 and 2.4 describe the denominator and numerator, respectively. Section 2.5 describes the risk adjustment model and variables used for risk adjustment. Section 2.6 presents the steps involved in calculating the final measure result. Section 2.7 describes the measure results.

## 2.1 Data Sources

This measure relies on data from Medicare FFS Part A claims, MA Encounter Data Records, and Medicare's Enrollment Database, as well as the Medicare Minimum Data Set, accessed via the CMS Centralized Data Repository (CDR) and the Integrated Data Repository (IDR) environments. The enrollment files provide beneficiary-level information such as date of birth, date of death, sex, reasons for Medicare eligibility, and enrollment histories in Medicare Parts A and C. The FFS claims and Medicare Advantage encounter files provide information about each LTCH and hospital stay, including dates of admission and discharge, diagnoses and procedures, and indicators for care received. Claims and encounter data are used to construct for each person a history of care before the LTCH stay, which is used for constructing risk adjustment variables. This measure also uses publicly available data, such as the Clinical Classification Software (CCS), Planned Readmission Algorithm (PRA), and Hierarchical Condition Categories (HCC).

Documentation for the Medicare FFS claims data, Medicare Advantage encounter data, and Medicare enrollment data is provided online by the Chronic Conditions Data Warehouse (CCW). Data dictionaries for all standard analytical files are available at: https://www2.ccwdata.org/web/guest/data-dictionaries.

[25] More information on the IMPACT Act is available at https://www.govtrack.us/congress/bills/113/hr4994.
[26] https://www.federalregister.gov/documents/2016/08/22/2016-18476/medicare-program-hospital-inpatient-prospective-payment-systems-for-acute-care-hospitals-and-the
[27] Discharge to Community - Post Acute Care (PAC) Long Term Care Hospital (LTCH) Quality Reporting Program (QRP). Additional information available at: https://cmit.cms.gov/cmit/#/MeasureView?variantId=1986&sectionNumber=1

## 2.2 LTCH Stay Construction and Measure Inclusion/Exclusion Criteria

### 2.2.1 Construct LTCH and Hospital Stays

Construct LTCH and hospital stays for the measure period. LTCH and hospital stays are constructed using final action Medicare FFS Part A claims and MA Encounter Data Records. Stays are constructed by linking claims that share the same beneficiary identifier, facility CCN, and admission date. Records with missing or invalid admission dates are first assigned an admission date by linkage to other claims with valid admission dates within the same stay, linked using beneficiary identifier, facility CCN, from date, through date, and patient status code. If no such linkage is identified, the admission date is imputed using the claim from date.

LTCH stays considered for the denominator prior to exclusion criteria are those that end within the measure period, based on the discharge date. To implement exclusion criteria and apply risk adjustment, index LTCH stays are linked to other stays, Medicare Minimum Data Set, and demographic and enrollment data using the beneficiary identifier.

### 2.2.2 Measure Time Window

The measure is calculated using two years of data. All LTCH stays ending during the measure window, except those that meet the exclusion criteria, are included in the measure. For LTCH patients with multiple LTCH stays during the two-year period, each stay is eligible for inclusion in the measure.

### 2.2.3 LTCH Stay Exclusion Criteria

Index LTCH stays are excluded from the measure calculation if any of the following exclusion criteria are met. All remaining index stays are eligible for measure calculation.

1. The beneficiary was under 18 years of age at the start of the stay.

   Rationale: There is limited literature on discharge destination outcomes in this age group; patients/residents in this age group represent a different cohort, likely living with their parents, and may be expected to have higher discharge to community rates compared with the rest of the Medicare population; and patients/residents in this age group represent a small proportion of the post-acute Medicare population.

2. The beneficiary was not discharged from an acute care hospital or Inpatient (IP) psychiatric hospital within 30 days prior to LTCH admission.

   Rationale: Acute care claims from the 30 days prior to IRF, SNF, or LTCH admission provide the principal diagnosis and other important patient/resident data for risk adjustment. In IRF, SNF, and LTCH settings, patients/residents without a short-term acute care discharge within the 30 days prior to PAC admission will be excluded from the measure, because important risk adjustment data will be missing.

3. The beneficiary was discharged from the LTCH against medical advice.

Rationale: Patients/residents who discharge themselves against medical advice are excluded because their care plan may not have been fully implemented, and the discharge destination may not reflect the facility's discharge recommendation. Additionally, patients/residents discharged against medical advice may potentially be at higher risk of post-discharge readmissions or death, depending on their medical condition, or due to potential non-adherence or non-compliance with care recommendations.

4. The beneficiary was discharged from the LTCH to an IP psychiatric hospital.

   Rationale: Patients/residents discharged to psychiatric hospital are excluded from the measure because community living at the time of discharge may be potentially inappropriate or unsafe for them due to their mental health or psychiatric condition.

5. The beneficiary was discharged from the LTCH to the same level of care (i.e., another LTCH).

   Rationale: Post-acute stays that end in transfer to the same level of care (e.g., LTCH to LTCH transfer) are excluded from the measure because their post-acute episode has not ended. For a post-acute episode that involves transfer to the same level of care, only the final post-acute provider is included in the measure. (Note that this exclusion does not apply to transitions across different levels of post-acute care (e.g., LTCH to SNF)).

6. The beneficiary was discharged from the LTCH to a federal hospital or disaster alternative care site.

   Rationale: Patients/residents discharged to disaster alternative care sites are excluded because these discharges are likely influenced by external emergency conditions, and may not represent discretionary discharges by the PAC provider. Discharges to federal hospitals are excluded because we will not have inpatient claims to determine whether the hospitalization was planned or unplanned.

7. The beneficiary was discharged from the LTCH to court/law enforcement.

   Rationale: Patients/residents who are discharged to court or law enforcement are likely ineligible for discharge to the community due to legal restrictions.

8. The beneficiary was either discharged from the LTCH to hospice or has a hospice benefit period that overlaps with the 31-day post-LTCH discharge window (identified via the presence of a hospice benefit start or end date within 31 days of LTCH discharge).

   Rationale: Patients/residents discharged to hospice care and those with a hospice benefit in the post-discharge observation window are terminally ill, and have very different goals of care compared with non-hospice patients/residents. For non-hospice patients/residents, the primary goal of post-acute care is to return to baseline, independent living in the community; death is an undesirable outcome in the non-hospice population. For hospice patients/residents, the goal is to provide the opportunity to die comfortably, at home or in a facility. A large proportion of hospice

patients/residents die in the 31-day window following discharge from the post-acute setting. The hospice agency, not the post-acute care setting, makes the final decision of discharge to hospice-home or hospice-facility.

9. The beneficiary was not continuously enrolled in Medicare (Part A, Original Medicare, and/or Part C, Medicare Advantage) for at least 90 days prior to LTCH admission and for at least 31 days after LTCH discharge.

   Rationale: Patients/residents not continuously enrolled in Medicare (Part A and/or Part C) for the 90 days prior to the PAC admission date are excluded because risk adjustment for certain comorbidities requires information on acute inpatient bills for 90 days prior to post-acute admission. Patients/residents not continuously enrolled in Medicare for at least 31 days after post-acute discharge are excluded because readmissions and death must be observable in the 31-day post-discharge period. Patients/residents without continuous Medicare coverage during the pre- and post-PAC periods will not have complete inpatient claims in the system.

10. The beneficiary was discharged from an acute care hospital or an IP psychiatric hospital within 30 days prior to LTCH admission, but the stay was for non-surgical treatment of cancer.

    Rationale: Patients/residents whose prior short-term acute care stay was for non-surgical treatment of cancer are excluded because they have a different trajectory for recovery after discharge, with a high mortality rate.

11. The LTCH stay is associated with problematic or incomplete data. This includes anomalous records for stays that overlap wholly or in part, or are otherwise erroneous or contradictory; stays where the beneficiary cannot be matched with Medicare enrollment data; or if the beneficiary exhausted their Medicare Part A or Medicare Advantage benefits during the stay.

    Rationale: This measure requires accurate information from the post-acute stay and prior short-term acute care stay in the elements used for risk adjustment. Patients/residents who have exhausted their Medicare Part A coverage during the PAC stay are excluded because the discharge destination decision may be related to exhaustion of benefits.

12. The LTCH stay was outside the 50 states, District of Columbia, Puerto Rico, and U.S. Territories (determined via the CCN of the provider rendering care, using the SOM CCN-to-U.S. state mappings).

    Rationale: Patients/residents who received care from foreign facilities may not have complete inpatient claims in the system, and these facilities may not be subject to policy decisions related to this quality measure.

13. The beneficiary had a long-term nursing home stay in the 180 days preceding their prior proximal hospitalization (identified via NH MDS Omnibus Budget Reconciliation Act

[OBRA] assessments) and was not discharged to community from that stay prior to the hospitalization.

Rationale: Baseline long-term NF residents did not live in the community before their LTCH stay, and discharge to a community setting may not be a safe or expected outcome for these residents.

14. The LTCH stay ended in planned discharged from the LTCH to an acute care hospital, IP psychiatric hospital, or an LTCH, identified by the presence of a claim from that facility type with a "claim from" date within one day of LTCH discharge that is flagged as a planned admission by the planned readmission algorithm (note that all IP psychiatric hospital stays are considered planned).

    Rationale: For the IRF and SNF settings, planned discharges to an acute care hospital or LTCH will be excluded. For the LTCH setting, planned discharges to an acute care hospital will be excluded. (Note that, in the LTCH setting, transfer to another LTCH is excluded because it represents a transfer to the same level of care).

## 2.3 Denominator

The measure denominator is the risk-adjusted expected number of LTCH stays with a discharge to community. This estimate includes risk adjustment for stay-level characteristics, with the LTCH-level random effect removed. The "expected" number of LTCH stays with a discharge to community is projected as if the same patients had been treated at the average LTCH.

The regression model used to calculate the denominator is developed using all non-excluded LTCH stays in the national data. The denominator is computed in the same way as the numerator, but the LTCH effect is set at the average. The descriptions of the discharge to community outcome, patient stays included in the measure, and numerator calculation are provided below.

## 2.4 Numerator

The measure numerator is the risk-adjusted predicted number of LTCH stays where the patient is discharged to the community, does not have an unplanned readmission to an acute care hospital or LTCH in the 31-day post-discharge observation window, and remains alive during the post-discharge observation window. This estimate starts with the observed discharges to community, and is risk-adjusted for patient characteristics and a statistical estimate of the facility effect beyond case mix.

### 2.4.1. Identifying Numerator Events

Identify LTCH stays ending in discharge to either home/self-care, home under care of an organized home health agency (HHA), home with a planned acute care hospital readmission, or discharged home under care of an HHA with a planned acute care hospital readmission, as indicated by the patient discharge status code on the last claim of the stay. Exhibit 1 below lists the Patient Discharge Status Codes used to define community.

**Exhibit 1.** Patient Discharge Status Codes Used to Determine Discharge to Community

| Status Code | Description |
|---|---|
| 01 | Discharged to home or self-care (routine discharge) |
| 06 | Discharged/transferred to home under care of organized home health service organization |
| 81 | Discharged to home or self-care with a planned acute care hospital readmission |
| 86 | Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission |

### 2.4.2. Numerator Exclusions: Death in the 31-Day Post-Discharge Observation Window

Remove numerator stays where the beneficiary died during the LTCH stay or within 31 days of LTCH discharge, identified by the patient status code or the beneficiary's date of death from the Medicare enrollment database.

### 2.4.3. Numerator Exclusions: Unplanned Readmissions in the 31-Day Post-Discharge Observation Window

Remove numerator stays where the beneficiary has an unplanned readmission to an acute care hospital or an LTCH within 31 days of LTCH discharge, including the day of discharge, as determined using the planned readmission algorithm. IP Psychiatric hospital stays are considered always planned.

**Exhibit 2.** Prevalence of Events Included in the DTC-PAC Numerator Definition

| Measure | FFS, n (%) N=80,089 | MA, n (%) N=33,541 | Total, n (%) N=113,630 |
|---|---|---|---|
| Numerator Events | | | |
| Successful discharge to community outcome per measure definition | 13,382 (16.7%) | 6,301 (18.8%) | 19,683 (17.3%) |
| Discharge destination code is community (1, 6, 81, 86) | 18,075 (22.6%) | 9,431 (28.1%) | 27,506 (24.2%) |
| Numerator Exclusions | | | |
| Unplanned readmissions at or following discharge (0-31 days) | 23,342 (29.1%) | 11,637 (34.7%) | 34,979 (30.8%) |
| Death within stay | 14,876 (18.6%) | 4,978 (14.8%) | 19,854 (17.5%) |
| Death at or following discharge (0-31 days) | 21,661 (27.0%) | 8,161 (24.3%) | 29,822 (26.2%) |

Note: Includes LTCH stays eligible for the DTC-PAC measure from fiscal year (FY) 2023-2024. The FFS column represents statistics for stays that include only FFS claims. The MA column represents statistics for stays that include any Medicare Advantage encounter record.

## 2.5 Statistical Risk Model and Risk Adjustment Covariates

### 2.5.1. Risk Adjustment Covariates

To account for beneficiary characteristics that may affect the risk of potentially preventable hospitalizations and observation stays, the risk adjustment model uses potential risk factors associated with each LTCH stay:

- Beneficiary age and sex categories.
- Original Reason for Entitlement Code (OREC) categories, defined as either (1) end-stage renal disease (ESRD), (2) disability, or (3) ERSD and disability.
- CCS category of principal diagnosis from the prior proximal acute care stay.
- Comorbidities based on the prior proximal acute care stay or a 90-day lookback.[28]
- Surgical procedure categories (if present) for the procedure codes from the prior proximal acute care stay.
- Dialysis during the prior proximal acute care stay where ESRD is not indicated.
- Indicator for ESRD status.
- Length of prior proximal acute care stay (if stay was in non-psychiatric hospital), or indicator if prior proximal acute care stay was in an IP psychiatric hospital.
- Number of intensive care unit (ICU) or cardiac care unit (CCU) days during the prior acute stay.
- Ventilator use during the LTCH stay.
- Number of acute hospital stays in the 90 days prior to LTCH admission (excluding the prior proximal acute care admission).
- Medicare Advantage (Part C) coverage at the start of the LTCH stay.

### 2.5.2. Statistical Risk Model

The following section summarizes the risk adjustment approach for the measure.

A hierarchical logistic regression to predict the probability of a countable discharge to community is used. The risk adjusters are predictor variables. The patient characteristics related to each discharge and a marker for the specific discharging LTCH are included in the equation. The equation is hierarchical in that both individual stay-level characteristics are accounted for as well as the clustering of stays into LTCHs. The statistical model estimates both the average predictive effect of the stay-level characteristics across all LTCHs and the degree to which each provider has an effect on the rate of numerator events that differs from that of the average LTCH. The LTCH effects are assumed to be randomly distributed around the average

[28] Depending on the specific comorbidity, diagnoses are mapped to HCCs using principal or secondary ICD-10 diagnosis codes from IP claims; HCCs are constructed using either the secondary diagnoses from the prior proximal acute care stay or all diagnoses from IP stays, other than the prior proximal stay, in the 90-day lookback period.

(according to a normal distribution). When computing the LTCH effect, hierarchical modeling accounts for predictors of numerator events, on average, such as demographic characteristics and other risk factors, the LTCH-specific observed rate, and the LTCH-specific number of stays eligible for the measure. The estimated SNF random effect is determined mostly by each LTCH's own data if the number of stays is relatively large (as the estimate would be relatively precise) but is adjusted towards the national average if the number of LTCH stays is small (as that would yield an estimate of lower precision).

Calculate coefficient estimates for use in risk adjustment using the following hierarchical model:

Let $Y_{ij}$ denote the outcome (equal to 1 if beneficiary i is discharged to community, 0 otherwise) for a beneficiary i at facility j. Let $Z_{ij} = (Z_1, Z_2, \ldots Z_k)$ denote a set of k risk adjustment variables. Let $\alpha_j$ represent the facility-specific intercept, $\mu$ the adjusted average intercept across all facilities, and $\tau^2$ the between-facility variance component.

The probability of the outcome occurring is assumed to relate to the covariates via a logit function:

$$\text{logit}(P(Y_{ij} = 1|Z_{ij}, \alpha_j)) = \log\left(\frac{P(Y_{ij} = 1|Z_{ij}, \alpha_j)}{1 - P(Y_{ij} = 1|Z_{ij}, \alpha_j)}\right) = \alpha_j + \beta * Z_{ij}$$

$$\alpha_j = \mu + \omega_j\,;\ \omega_j \sim N(0, \tau^2)$$

## 2.6 Measure Calculation Algorithm

### 2.6.1 Determine the National Observed Rate.

Divide the number of eligible stays resulting in a successful DTC (Section 2.4) by the total number of all eligible stays (Section 2.2).

### 2.6.2 Calculate provider-level final scores.

Using the estimated coefficients $\hat{\beta}$, $\hat{\mu}$, and $\hat{\alpha_j} = \hat{\mu} + \hat{\omega_j}$ determined in Section 2.5, calculate the following values for each provider:

#### 2.6.2.1 Facility-level expected DTC number:

The number of DTCs that would be expected if that facility's beneficiaries were treated at the average provider. This is defined as:

$$\text{Expected Value}_j = \sum \frac{\exp(\hat{\mu} + \hat{\beta} \cdot Z_{ij})}{\exp(\hat{\mu} + \hat{\beta} \cdot Z_{ij}) + 1}$$

#### 2.6.2.2 Facility-level predicted DTC number:

The predicted number of DTCs that would occur from that facility assuming the estimated provider-specific effect in the model. This is defined as:

$$\text{Predicted Value}_j = \sum \frac{\exp(\hat{\alpha}_j + \hat{\beta} \cdot Z_{ij})}{\exp(\hat{\alpha}_j + \hat{\beta} \cdot Z_{ij}) + 1}$$

#### 2.6.2.3 Risk-Standardized DTC Rate (RSDTCR):

The final risk-adjusted facility-level DTC rate, used as the final publicly reported score. Let $\bar{Y}$ denote the national observed rate calculated in Section 2.6.1. The RSDTCR is then defined as:

$$\text{RSDTCR} = \frac{\text{Predicted Value}_j}{\text{Expected Value}_j} \times \bar{Y}$$

## 2.7 Measure Results

Exhibit 3 shows the stay-level observed DTC-PAC rate for all eligible LTCH patients. The proportion of LTCH patients successfully discharged to community was 16.7 for stays covered by FFS (Part A), 18.8 for stays covered by MA (Part C), and 17.3 across all stays.

**Exhibit 3.** Stay-level observed DTC-PAC Rate

| Measure | FFS, n (%) N=80,089 | MA, n (%) N=33,541 | Total, n (%) N=113,630 |
|---|---|---|---|
| Stay-level Observed DTC-PAC rate | 13,382 (16.7%) | 6,301 (18.8%) | 19,683 (17.3%) |

Note: Includes LTCH stays eligible for the DTC-PAC measure from FY 2023-2024. The FFS column represents statistics for stays that include only FFS claims. The MA column represents statistics for stays that include any Medicare Advantage encounter record.

Exhibit 4 shows the LTCH-level observed and risk standardized DTC-PAC rate for all LTCHs and limited to LTCHs with at least 25 eligible stays in the measure period. The risk standardized DTC-PAC rate across all LTCHs was 17.85, and for LTCHs with at least 25 stays was 17.67.

**Exhibit 4.** LTCH-level observed and risk standardized DTC-PAC Rate

| Measure | All LTCHs N=346 | LTCHs with 25+ Stays N= 332 |
|---|---|---|
| Observed DTC-PAC rate | 19.12 | 18.27 |
| Risk standardized DTC-PAC rate | 17.85 | 17.67 |

Note: Calculated using LTCH stays eligible for the DTC-PAC measure from FY 2023-2024.

# 3. Measure Testing

Below we provide testing results for the DTC measure including reportability, variability, reliability and validity.

## 3.1 Reportability

Reportability testing examines the total number and proportion of LTCH providers that have at least 25 eligible LTCH stays for the DTC-PAC measure in the reporting period. 332 LTCHs out of 346 (95.95%) had at least 25 stays.

**Exhibit 5.** Publicly Reportable LTCHs, FY 2023-2024

| Total Number of LTCHs | Total Number of LTCHs with ≥ 25 Stays | Percentage of LTCHs with ≥ 25 Stays |
|---|---|---|
| 346 | 332 | 95.95% |

Note: DTC-PAC measure results calculated using FY 2023-2024 data.

## 3.2 Variability

Variability testing summarizes the distribution of the provider-level final DTC-PAC results.

**Exhibit 6.** LTCH-Level Distribution of DTC

| N | Mean Score | Standard Deviation | Minimum | 25th Percentile | 50th Percentile | 75th Percentile | Maximum |
|---|---|---|---|---|---|---|---|
| 332 | 17.67 | 5.47 | 2.26 | 14.21 | 17.16 | 19.89 | 68.69 |

Note: DTC results calculated using FY 2023-2024 data from providers with at least 25 stays.

## 3.3 Reliability

The split-half reliability test examined agreement between two DTC measure results for each LTCH based on randomly split, independent subsets of observations for each LTCH in the same measurement period. Good agreement between pairs of performance measure results calculated in this manner provides evidence that the measure is capturing an attribute of the LTCH rather than the effect of random chance.

For LTCHs with at least 25 eligible stays in FY 2023-2024, each LTCH's patients were randomly divided into halves. We calculated a provider-level DTC result for each split-half sample. We used the Shrout-Fleiss intraclass correlation coefficient (ICC [2, 1]) with the Spearman-Brown correction to calculate agreement between the split-half results. The overall intraclass correlation coefficient for LTCHs with more than 25 eligible patients was 0.891, which indicates excellent reliability.[29]

The signal-to-noise ratio (SNR) assesses how well the DTC measure distinguishes true differences in performance across LTCHs. The "signal" represents real variation in LTCH performance, while the "noise" reflects random variation or measurement error. A higher SNR indicates that most of the observed variation is meaningful rather than due to chance. To ensure

[29] Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological assessment*, *6*(4), 284.

a stable estimate, the SNR calculation was limited to LTCHs with at least 25 stays in the FY 2023-2024 measure window. The resulting SNR was 0.93, which corresponds to strong reliability.

## 3.4 Validity

To evaluate convergent validity, we examined the relationships between provider DTC results and related LTCH measures. Using Spearman's rank correlation, we compared providers' DTC results to the claims-based measures Potentially Preventable 30-Day Post-Discharge Readmission (PPR-PD) and Medicare Spending per Beneficiary (MSPB). We hypothesized that the LTCHs that have a lower (better) result on these measures are likely to have a higher (better) result on the DTC measure. Therefore, we are looking for a negative correlation between these measures and the DTC measure as support for these measures having convergent validity.

We found small, significant negative association between DTC-PAC results and PPR-PD and MSPB results. The analysis used DTC results calculated using FY 2023-2024 data from providers with at least 25 stays.

**Exhibit 7.** Correlations Between DTC and Other Publicly Reported Measures

| Measure | N LTCHs | Spearman's Correlation | p-value |
|---|---|---|---|
| Potentially Preventable 30-Day Post-Discharge Readmission (PPR-PD) | 295 | -0.252 | < 0.001 |
| Medicare Spending per Beneficiary (MSPB) | 297 | -0.406 | < 0.001 |

Note: RTI analysis of Medicare FFS claims data and Medicare Advantage encounter data (DTC-PAC results calculated using FY 2023-2024 data from providers with at least 25 stays), and publicly reported LTCH quality measures (available for download at https://data.cms.gov/provider-data). Data collection periods for publicly reported LTCH claims-based measures used in this analysis are the most recent available.

# Appendix A. LTCH DTC Risk-Adjustment Covariates

Exhibit 8 shows the prevalence of each risk factor for LTCH stays eligible for the DTC-PAC measure from FY 2023-2024, as well as risk adjustment coefficients and standard errors for the pooled (FFS and MA) population. The FFS column represents statistics for stays that include only FFS claims. The MA column represents statistics for stays that include any Medicare Advantage encounter record.

**Exhibit 8.** LTCH DTC Risk-Adjustment Covariates Prevalence and Model Coefficients

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| MA coverage at start of stay | 0 (0.0%) | 33,383 (99.5%) | 33,383 (29.4%) | 0.4377 | <0.001 |
| Age 18-44 years, male | 1,744 (2.2%) | 692 (2.1%) | 2,436 (2.1%) | 0.8260 | <0.001 |
| Age 45-54 years, male | 2,225 (2.8%) | 1,068 (3.2%) | 3,293 (2.9%) | 0.5922 | <0.001 |
| Age 55-59 years, male | 2,021 (2.5%) | 1,189 (3.5%) | 3,210 (2.8%) | 0.4133 | <0.001 |
| Age 60-64 years, male | 2,881 (3.6%) | 1,840 (5.5%) | 4,721 (4.2%) | 0.2532 | <0.001 |
| Age 65-69 years, male | 8,085 (10.1%) | 4,229 (12.6%) | 12,314 (10.8%) | 0.0744 | 0.0491 |
| Age 70-74 years, male | 8,488 (10.6%) | 3,555 (10.6%) | 12,043 (10.6%) | -0.0925 | 0.0174 |
| Age 75-79 years, male | 7,640 (9.5%) | 2,734 (8.2%) | 10,374 (9.1%) | -0.3265 | <0.001 |
| Age 80-84 years, male | 5,450 (6.8%) | 1,594 (4.8%) | 7,044 (6.2%) | -0.4904 | <0.001 |
| Age 85-89 years, male | 2,936 (3.7%) | 637 (1.9%) | 3,573 (3.1%) | -0.6442 | <0.001 |
| Age 90-94 years, male | 1,075 (1.3%) | 166 (0.5%) | 1,241 (1.1%) | -0.9175 | <0.001 |
| Age 95+ years, male | 286 (0.4%) | 39 (0.1%) | 325 (0.3%) | -0.8975 | <0.001 |
| Age 18-44 years, female | 1,125 (1.4%) | 521 (1.6%) | 1,646 (1.4%) | 0.8539 | <0.001 |
| Age 45-54 years, female | 1,625 (2.0%) | 951 (2.8%) | 2,576 (2.3%) | 0.5602 | <0.001 |
| Age 55-59 years, female | 1,376 (1.7%) | 1,005 (3.0%) | 2,381 (2.1%) | 0.3211 | <0.001 |
| Age 60-64 years, female | 2,135 (2.7%) | 1,579 (4.7%) | 3,714 (3.3%) | 0.2207 | <0.001 |
| Age 65-69 years, female [REFERENCE GROUP] | 6,376 (8.0%) | 3,506 (10.5%) | 9,882 (8.7%) | - | - |
| Age 70-74 years, female | 7,328 (9.1%) | 3,260 (9.7%) | 10,588 (9.3%) | -0.1692 | <0.001 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| Age 75-79 years, female | 7,187 (9.0%) | 2,572 (7.7%) | 9,759 (8.6%) | -0.3274 | <0.001 |
| Age 80-84 years, female | 5,112 (6.4%) | 1,472 (4.4%) | 6,584 (5.8%) | -0.5527 | <0.001 |
| Age 85-89 years, female | 3,046 (3.8%) | 678 (2.0%) | 3,724 (3.3%) | -0.6550 | <0.001 |
| Age 90-94 years, female | 1,393 (1.7%) | 201 (0.6%) | 1,594 (1.4%) | -0.7163 | <0.001 |
| Age 95+ years, female | 555 (0.7%) | 53 (0.2%) | 608 (0.5%) | -0.5847 | <0.001 |
| Prox. Surgery: Vascular | 2,573 (3.2%) | 1,583 (4.7%) | 4,156 (3.7%) | -0.0443 | 0.4289 |
| Prox. Surgery: Orthopedics | 7,168 (9.0%) | 3,587 (10.7%) | 10,755 (9.5%) | -0.1252 | <0.001 |
| Prox. Surgery: General | 10,967 (13.7%) | 5,993 (17.9%) | 16,960 (14.9%) | -0.0053 | 0.8527 |
| Prox. Surgery: Cardiothoracic | 5,661 (7.1%) | 3,717 (11.1%) | 9,378 (8.3%) | 0.1995 | <0.001 |
| Prox. Surgery: Neurosurgery | 3,357 (4.2%) | 2,043 (6.1%) | 5,400 (4.8%) | -0.2891 | <0.001 |
| Prox. Surgery: Plastic | 8,258 (10.3%) | 4,553 (13.6%) | 12,811 (11.3%) | 0.0074 | 0.8013 |
| Prox. Surgery: Otolaryngology | 832 (1.0%) | 513 (1.5%) | 1,345 (1.2%) | 0.3388 | <0.001 |
| Prox. Surgery: Obstetrics/gynecology | 221 (0.3%) | 137 (0.4%) | 358 (0.3%) | -0.1630 | 0.2638 |
| Prox. Surgery: Urologic | 1,004 (1.3%) | 551 (1.6%) | 1,555 (1.4%) | 0.1203 | 0.0792 |
| Dialysis in hospital where HCC 136/ESRD not indicated | 6,859 (8.6%) | 4,010 (12.0%) | 10,869 (9.6%) | -0.4020 | <0.001 |
| ESRD | 6,682 (8.3%) | 2,550 (7.6%) | 9,232 (8.1%) | -0.0250 | 0.7046 |
| Original reason for entitlement is age [REFERENCE GROUP] | 50,557 (63.1%) | 17,412 (51.9%) | 67,969 (59.8%) | - | - |
| Original reason for entitlement is ESRD only, or aged with ESRD | 2,128 (2.7%) | 671 (2.0%) | 2,799 (2.5%) | -0.2183 | 0.0018 |
| Original reason for entitlement is disabled without ESRD | 26,654 (33.3%) | 15,156 (45.2%) | 41,810 (36.8%) | -0.0489 | 0.0435 |
| Original reason for entitlement is disabled with ESRD | 750 (0.9%) | 302 (0.9%) | 1,052 (0.9%) | -0.1924 | 0.0489 |
| ICU/CCU days associated with prior acute stay: 0 [REFERENCE GROUP] | 12,290 (15.3%) | 3,186 (9.5%) | 15,476 (13.6%) | - | - |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| ICU/CCU days associated with prior acute stay: 1-3 | 7,040 (8.8%) | 485 (1.4%) | 7,525 (6.6%) | 0.0863 | 0.0197 |
| ICU/CCU days associated with prior acute stay: 4-9 | 22,905 (28.6%) | 3,856 (11.5%) | 26,761 (23.6%) | 0.0578 | 0.0444 |
| ICU/CCU days associated with prior acute stay: 10-19 | 21,861 (27.3%) | 9,627 (28.7%) | 31,488 (27.7%) | -0.0966 | 0.0023 |
| ICU/CCU days associated with prior acute stay: 20+ | 15,993 (20.0%) | 16,387 (48.9%) | 32,380 (28.5%) | -0.3271 | <0.001 |
| Prior stay: LOS 1-6 days [REFERENCE GROUP] | 11,025 (13.8%) | 1,096 (3.3%) | 12,121 (10.7%) | - | - |
| Prior stay: LOS 7-14 days | 30,676 (38.3%) | 7,556 (22.5%) | 38,232 (33.6%) | -0.1242 | <0.001 |
| Prior stay: LOS 15+ days | 38,295 (47.8%) | 24,833 (74.0%) | 63,128 (55.6%) | -0.3108 | <0.001 |
| Prior stay: psychiatric hospital | 93 (0.1%) | 56 (0.2%) | 149 (0.1%) | 0.1581 | 0.3932 |
| Prior ACH stays: 0 stays in past 90 days (excluding prior proximal) [REFERENCE] | 42,541 (53.1%) | 19,398 (57.8%) | 61,939 (54.5%) | - | - |
| Prior ACH stays: 1 stay in past 90 days (excluding prior proximal) | 23,474 (29.3%) | 9,208 (27.5%) | 32,682 (28.8%) | -0.3087 | <0.001 |
| Prior ACH stays: 2 stays in past 90 days (excluding prior proximal) | 9,495 (11.9%) | 3,405 (10.2%) | 12,900 (11.4%) | -0.4883 | <0.001 |
| Prior ACH stays: 3 stays in past 90 days (excluding prior proximal) | 3,278 (4.1%) | 1,038 (3.1%) | 4,316 (3.8%) | -0.6758 | <0.001 |
| Prior ACH stays: 4 stays in past 90 days (excluding prior proximal) | 960 (1.2%) | 336 (1.0%) | 1,296 (1.1%) | -0.9683 | <0.001 |
| Prior ACH stays: 5 stays in past 90 days (excluding prior proximal) | 341 (0.4%) | 156 (0.5%) | 497 (0.4%) | -1.2656 | <0.001 |
| Prolonged ventilation during current PAC stay | 15,811 (19.7%) | 10,680 (31.8%) | 26,491 (23.3%) | -0.9147 | <0.001 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 1, 3, 4, 5, 6, 7, 8, 9, 10: Tuberculosis; Bacterial infection, unspecified site; Mycoses; HIV infection; Hepatitis; Viral Infection; Other infections, including parasitic; Sexually transmitted infections (not HIV or hepatitis); Immunizations and screening for infectious disease | 266 (0.3%) | 102 (0.3%) | 368 (0.3%) | -0.0100 | 0.9405 |
| CCS 2: Septicemia (except in labor) | 25,712 (32.1%) | 10,283 (30.7%) | 35,995 (31.7%) | -0.1280 | <0.001 |
| CCS 44, 45, 46, 47, 48, 51, 52, 53, 58, 112, 213, 214, 215, 216, 217: Neoplasms of unspecified nature or uncertain behavior/ Maintenance chemotherapy, radiotherapy; Benign neoplasm of uterus; Other and unspecified benign neoplasm; Thyroid disorders; Other endocrine disorders; Nutritional deficiencies; Disorders of lipid metabolism; Other nutritional, endocrine, and metabolic disorders; Transient cerebral ischemia; Cardiac and circulatory, digestive, genitourinary, nervous system, and other congenital anomalies | 643 (0.8%) | 304 (0.9%) | 947 (0.8%) | -0.1800 | 0.0634 |
| CCS 55: Fluid and electrolyte disorders | 485 (0.6%) | 135 (0.4%) | 620 (0.5%) | -0.2638 | 0.0267 |
| CCS 56, 57, 59, 60, 61, 62, 63, 64: Cystic fibrosis; Immunity disorders; Deficiency and other anemia; Acute posthemorrhagic anemia; Sickle cell anemia; Coagulation and hemorrhagic disorders; Diseases of white blood cells; Other hematologic conditions | 390 (0.5%) | 99 (0.3%) | 489 (0.4%) | -0.2666 | 0.0484 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 76, 77, 78: Meningitis (except that caused by tuberculosis or sexually transmitted disease); Encephalitis (except that caused by tuberculosis or sexually transmitted disease); Other CNS infection and poliomyelitis | 376 (0.5%) | 150 (0.4%) | 526 (0.5%) | -0.2825 | 0.0306 |
| CCS 79, 80, 81, 82: Parkinson`s disease; Multiple sclerosis; Other hereditary and degenerative nervous system conditions; Paralysis | 144 (0.2%) | 46 (0.1%) | 190 (0.2%) | -0.0773 | 0.7071 |
| CCS 83, 95: Epilepsy, convulsions; Other nervous system disorders | 1,519 (1.9%) | 704 (2.1%) | 2,223 (2.0%) | -0.4048 | <0.001 |
| CCS 96: Heart valve disorders | 485 (0.6%) | 245 (0.7%) | 730 (0.6%) | -0.1458 | 0.2499 |
| CCS 98, 99: Essential hypertension; Hypertension with complications and secondary hypertension | 3,641 (4.5%) | 1,239 (3.7%) | 4,880 (4.3%) | 0.0043 | 0.9313 |
| CCS 100, 107: Acute myocardial infarction; Cardiac arrest and ventricular fibrillation | 1,447 (1.8%) | 754 (2.2%) | 2,201 (1.9%) | -0.1470 | 0.0470 |
| CCS 101, 102: Coronary atherosclerosis and other heart disease; Nonspecific chest pain | 619 (0.8%) | 360 (1.1%) | 979 (0.9%) | -0.0863 | 0.4007 |
| CCS 103: Pulmonary heart disease | 515 (0.6%) | 218 (0.6%) | 733 (0.6%) | -0.0006 | 0.9854 |
| CCS 105, 106: Conduction disorders; Cardiac dysrhythmias | 760 (0.9%) | 295 (0.9%) | 1,055 (0.9%) | 0.0114 | 0.8988 |
| CCS 108: Congestive heart failure, nonhypertensive | 208 (0.3%) | 63 (0.2%) | 271 (0.2%) | -0.1567 | 0.3519 |
| CCS 109, 110, 111, 113: Acute cerebrovascular disease; Occlusion or stenosis of precerebral arteries; Other and ill-defined cerebrovascular disease; Late effects of cerebrovascular disease | 3,985 (5.0%) | 2,436 (7.3%) | 6,421 (5.7%) | -0.6223 | <0.001 |
| CCS 114: Peripheral and visceral atherosclerosis | 260 (0.3%) | 124 (0.4%) | 384 (0.3%) | -0.2388 | 0.1139 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 115: Aortic, peripheral, and visceral artery aneurysms | 480 (0.6%) | 307 (0.9%) | 787 (0.7%) | -0.2121 | 0.0799 |
| CCS 116, 117: Aortic and peripheral arterial embolism or thrombosis; Other circulatory disease | 182 (0.2%) | 53 (0.2%) | 235 (0.2%) | -0.1947 | 0.2898 |
| CCS 118, 119, 120, 121: Phlebitis, thrombophlebitis and thromboembolism; Varicose veins of lower extremity; Hemorrhoids; Other diseases of veins and lymphatics | 188 (0.2%) | 56 (0.2%) | 244 (0.2%) | 0.0081 | 0.9615 |
| CCS 122, 123, 125, 126: Pneumonia (except that caused by tuberculosis or sexually transmitted disease); Influenza; Acute bronchitis; Other upper respiratory infections | 4,916 (6.1%) | 1,504 (4.5%) | 6,420 (5.6%) | -0.0435 | 0.3242 |
| CCS 124, 130, 132, 133, 134: Acute and chronic tonsillitis; Pleurisy, pneumothorax, pulmonary collapse; Lung disease due to external agents; Other lower respiratory disease; Other upper respiratory disease | 1,174 (1.5%) | 483 (1.4%) | 1,657 (1.5%) | -0.2353 | 0.0014 |
| CCS 127, 128: Chronic obstructive pulmonary disease and bronchiectasis; Asthma | 801 (1.0%) | 315 (0.9%) | 1,116 (1.0%) | -0.0193 | 0.8058 |
| CCS 129: Aspiration pneumonitis, food/vomitus | 1,070 (1.3%) | 326 (1.0%) | 1,396 (1.2%) | -0.4412 | <0.001 |
| CCS 131: Respiratory failure, insufficiency, arrest (adult) | 3,926 (4.9%) | 1,998 (6.0%) | 5,924 (5.2%) | -0.1156 | 0.0136 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 147, 148, 154, 155: Intestinal infection; Disorders of teeth and jaw; Diseases of mouth, excluding dental; Esophageal disorders; Gastroduodenal ulcer (except hemorrhage); Gastritis and duodenitis; Other disorders of stomach and duodenum; Appendicitis and other appendiceal conditions; Abdominal hernia; Regional enteritis and ulcerative colitis; Diverticulosis and diverticulitis; Anal and rectal conditions; Peritonitis and intestinal abscess; Noninfectious gastroenteritis; Other gastrointestinal disorders | 2,173 (2.7%) | 889 (2.7%) | 3,062 (2.7%) | -0.0882 | 0.1197 |
| CCS 145: Intestinal obstruction without hernia | 786 (1.0%) | 303 (0.9%) | 1,089 (1.0%) | 0.0239 | 0.7840 |
| CCS 149, 150, 151, 152: Biliary tract disease; Liver disease, alcohol-related; Other liver diseases; Pancreatic disorders (not diabetes) | 660 (0.8%) | 242 (0.7%) | 902 (0.8%) | -0.0282 | 0.7692 |
| CCS 153: Gastrointestinal hemorrhage | 643 (0.8%) | 242 (0.7%) | 885 (0.8%) | -0.1461 | 0.1637 |
| CCS 157, 158: Acute and unspecified renal failure; Chronic kidney disease | 1,102 (1.4%) | 275 (0.8%) | 1,377 (1.2%) | -0.2758 | 0.0012 |
| CCS 159: Urinary tract infections | 593 (0.7%) | 98 (0.3%) | 691 (0.6%) | -0.0017 | 0.9856 |
| CCS 167, 197, 198, 199, 200, 240: Nonmalignant breast conditions; Skin and subcutaneous tissue infections; Other inflammatory condition of skin; Chronic ulcer of skin; Other skin disorders; Burns | 1,885 (2.4%) | 758 (2.3%) | 2,643 (2.3%) | -0.0503 | 0.3551 |
| CCS 202, 210: Rheumatoid arthritis and related disease; Systemic lupus erythematosus and connective tissue disorders | 54 (0.1%) | 29 (0.1%) | 83 (0.1%) | -0.4845 | 0.1301 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 205: Spondylosis, intervertebral disc disorders, other back problems | 438 (0.5%) | 191 (0.6%) | 629 (0.6%) | -0.4017 | <0.001 |
| CCS 207, 228, 229, 230, 231: Pathological fracture; Skull and face fractures; Fracture of upper limb; Fracture of lower limb; Other fractures | 1,360 (1.7%) | 623 (1.9%) | 1,983 (1.7%) | -0.6567 | <0.001 |
| CCS 225, 232, 234, 235, 236, 239, 244: Joint disorders and dislocations, trauma-related; Sprains and strains; Crushing injury or internal injury; Open wounds of head, neck, and trunk; Open wounds of extremities; Superficial injury, contusion; Other injuries and conditions due to external causes | 811 (1.0%) | 444 (1.3%) | 1,255 (1.1%) | -0.1464 | 0.0885 |
| CCS 226: Fracture of neck of femur (hip) | 600 (0.7%) | 165 (0.5%) | 765 (0.7%) | -0.7935 | <0.001 |
| CCS 227: Spinal cord injury | 292 (0.4%) | 218 (0.6%) | 510 (0.4%) | -1.0147 | <0.001 |
| CCS 233: Intracranial injury | 1,573 (2.0%) | 863 (2.6%) | 2,436 (2.1%) | -0.7144 | <0.001 |
| CCS 237, 238: Complication of device, implant or graft; Complications of surgical procedures or medical care | 6,902 (8.6%) | 2,922 (8.7%) | 9,824 (8.6%) | 0.0315 | 0.4107 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| CCS 245, 246, 247, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259: Syncope; Fever of unknown origin; Lymphadenitis; Shock; Nausea and vomiting; Abdominal pain; Malaise and fatigue; Allergic reactions; Rehabilitation care, fitting of prostheses, and adjustment of devices; Administrative/social admission; Medical examination/evaluation; Other aftercare; Other screening for suspected conditions (not mental disorders or infectious disease); Residual codes, unclassified | 190 (0.2%) | 74 (0.2%) | 264 (0.2%) | -0.3861 | 0.0370 |
| CCS 248: Gangrene | 198 (0.2%) | 60 (0.2%) | 258 (0.2%) | 0.0543 | 0.7350 |
| HCC 1: HIV/AIDS | 399 (0.5%) | 236 (0.7%) | 635 (0.6%) | 0.1560 | 0.1544 |
| HCC 2: Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock | 31,611 (39.5%) | 15,641 (46.6%) | 47,252 (41.6%) | -0.1538 | <0.001 |
| HCC 6: Opportunistic Infections | 1,645 (2.1%) | 936 (2.8%) | 2,581 (2.3%) | -0.1681 | 0.0097 |
| HCC 8: Metastatic Cancer and Acute Leukemia | 3,277 (4.1%) | 1,196 (3.6%) | 4,473 (3.9%) | -0.1578 | <0.001 |
| HCC 9: Lung and Other Severe Cancers | 2,337 (2.9%) | 983 (2.9%) | 3,320 (2.9%) | 0.0573 | 0.2559 |
| HCC 10: Lymphoma and Other Cancers | 1,546 (1.9%) | 527 (1.6%) | 2,073 (1.8%) | -0.0319 | 0.6256 |
| HCC 17: Diabetes with Acute Complications | 1,237 (1.5%) | 748 (2.2%) | 1,985 (1.7%) | -0.2370 | <0.001 |
| HCC 18, 19: Diabetes with Chronic Complications; Diabetes without Complication | 35,368 (44.2%) | 15,840 (47.2%) | 51,208 (45.1%) | -0.0708 | <0.001 |
| HCC 21: Protein-Calorie Malnutrition | 23,594 (29.5%) | 11,144 (33.2%) | 34,738 (30.6%) | -0.2436 | <0.001 |
| HCC 22: Morbid Obesity | 14,302 (17.9%) | 7,262 (21.7%) | 21,564 (19.0%) | -0.1690 | <0.001 |
| HCC 27: End-Stage Liver Disease | 2,389 (3.0%) | 1,041 (3.1%) | 3,430 (3.0%) | -0.3040 | <0.001 |
| HCC 28: Cirrhosis of Liver | 2,096 (2.6%) | 950 (2.8%) | 3,046 (2.7%) | -0.1680 | 0.0020 |
| HCC 29: Chronic Hepatitis | 475 (0.6%) | 305 (0.9%) | 780 (0.7%) | 0.0259 | 0.7951 |
| HCC 33: Intestinal Obstruction/Perforation | 9,926 (12.4%) | 5,449 (16.2%) | 15,375 (13.5%) | -0.0728 | 0.0133 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| HCC 35: Inflammatory Bowel Disease | 1,111 (1.4%) | 404 (1.2%) | 1,515 (1.3%) | -0.1994 | 0.0087 |
| HCC 46: Severe Hematological Disorders | 575 (0.7%) | 192 (0.6%) | 767 (0.7%) | -0.3743 | 0.0020 |
| HCC 48: Coagulation Defects and Other Specified Hematological Disorders | 15,365 (19.2%) | 7,235 (21.6%) | 22,600 (19.9%) | -0.0450 | 0.0606 |
| HCC 51: Dementia With Complications | 4,852 (6.1%) | 1,932 (5.8%) | 6,784 (6.0%) | -0.2849 | <0.001 |
| HCC 52: Dementia Without Complication | 6,846 (8.5%) | 1,680 (5.0%) | 8,526 (7.5%) | -0.2942 | <0.001 |
| HCC 57: Schizophrenia | 1,954 (2.4%) | 731 (2.2%) | 2,685 (2.4%) | -0.3547 | <0.001 |
| HCC 58: Reactive and Unspecified Psychosis | 415 (0.5%) | 115 (0.3%) | 530 (0.5%) | -0.4396 | 0.0019 |
| HCC 59: Major Depressive, Bipolar, and Paranoid Disorders | 4,451 (5.6%) | 2,434 (7.3%) | 6,885 (6.1%) | -0.0927 | 0.0085 |
| HCC 60: Personality Disorders | 71 (0.1%) | 35 (0.1%) | 106 (0.1%) | 0.0878 | 0.7308 |
| HCC 72: Spinal Cord Disorders/Injuries | 1,317 (1.6%) | 642 (1.9%) | 1,959 (1.7%) | -0.2120 | 0.0033 |
| HCC 74: Cerebral Palsy | 938 (1.2%) | 170 (0.5%) | 1,108 (1.0%) | 0.0436 | 0.5759 |
| HCC 77: Multiple Sclerosis | 759 (0.9%) | 355 (1.1%) | 1,114 (1.0%) | -0.0634 | 0.4327 |
| HCC 78: Parkinson's and Huntington's Diseases | 2,125 (2.7%) | 514 (1.5%) | 2,639 (2.3%) | -0.2379 | <0.001 |
| HCC 79: Seizure Disorders and Convulsions | 7,132 (8.9%) | 3,212 (9.6%) | 10,344 (9.1%) | -0.0414 | 0.2121 |
| HCC 80: Coma, Brain Compression/Anoxic Damage | 6,138 (7.7%) | 3,786 (11.3%) | 9,924 (8.7%) | -0.4897 | <0.001 |
| HCC 82: Respirator Dependence/Tracheostomy Status | 8,415 (10.5%) | 6,014 (17.9%) | 14,429 (12.7%) | -0.2188 | <0.001 |
| HCC 83: Respiratory Arrest | 31 (<0.1%) | 18 (0.1%) | 49 (<0.1%) | -0.1311 | 0.7541 |
| HCC 84: Cardio-Respiratory Failure and Shock | 46,113 (57.6%) | 19,740 (58.9%) | 65,853 (58.0%) | -0.1890 | <0.001 |
| HCC 85: Congestive Heart Failure | 37,967 (47.4%) | 16,244 (48.4%) | 54,211 (47.7%) | -0.1274 | <0.001 |
| HCC 86: Acute Myocardial Infarction | 7,698 (9.6%) | 3,658 (10.9%) | 11,356 (10.0%) | -0.0875 | 0.0068 |
| HCC 96: Specified Heart Arrhythmias | 33,205 (41.5%) | 13,201 (39.4%) | 46,406 (40.8%) | -0.1475 | <0.001 |
| HCC 99: Intracranial Hemorrhage | 2,408 (3.0%) | 1,643 (4.9%) | 4,051 (3.6%) | -0.3822 | <0.001 |
| HCC 100: Ischemic or Unspecified Stroke | 3,121 (3.9%) | 2,144 (6.4%) | 5,265 (4.6%) | -0.4824 | <0.001 |
| HCC 103: Hemiplegia/Hemiparesis | 7,115 (8.9%) | 3,699 (11.0%) | 10,814 (9.5%) | -0.4137 | <0.001 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| HCC 104: Monoplegia, Other Paralytic Syndromes | 436 (0.5%) | 217 (0.6%) | 653 (0.6%) | -0.0884 | 0.4571 |
| HCC 106: Atherosclerosis of the Extremities with Ulceration or Gangrene | 4,132 (5.2%) | 2,112 (6.3%) | 6,244 (5.5%) | -0.3703 | <0.001 |
| HCC 107: Vascular Disease with Complications | 4,901 (6.1%) | 2,643 (7.9%) | 7,544 (6.6%) | -0.1409 | <0.001 |
| HCC 108: Vascular Disease | 13,974 (17.4%) | 6,502 (19.4%) | 20,476 (18.0%) | -0.0567 | 0.0168 |
| HCC 112: Fibrosis of Lung and Other Chronic Lung Disorders | 2,273 (2.8%) | 802 (2.4%) | 3,075 (2.7%) | -0.1719 | 0.0019 |
| HCC 114: Aspiration and Specified Bacterial Pneumonias | 21,424 (26.8%) | 11,904 (35.5%) | 33,328 (29.3%) | -0.0832 | <0.001 |
| HCC 134: Dialysis Status | 6,400 (8.0%) | 2,654 (7.9%) | 9,054 (8.0%) | -0.4288 | <0.001 |
| HCC 135: Acute Renal Failure | 34,468 (43.0%) | 16,026 (47.8%) | 50,494 (44.4%) | -0.2248 | <0.001 |
| HCC 136: Chronic Kidney Disease, Stage 5 | 1,855 (2.3%) | 813 (2.4%) | 2,668 (2.3%) | -0.5200 | <0.001 |
| HCC 137: Chronic Kidney Disease, Severe (Stage 4) | 527 (0.7%) | 126 (0.4%) | 653 (0.6%) | -0.1989 | 0.0781 |
| HCC 138, 139: Chronic Kidney Disease, Moderate (Stage 3); Chronic Kidney Disease, Mild or Unspecified (Stages 1-2 or Unspecified) | 2,758 (3.4%) | 883 (2.6%) | 3,641 (3.2%) | -0.0706 | 0.1322 |
| HCC 157, 158: Pressure Ulcer of Skin with Necrosis Through to Muscle, Tendon, or Bone; Pressure Ulcer of Skin with Full Thickness Skin Loss | 8,821 (11.0%) | 3,969 (11.8%) | 12,790 (11.3%) | -0.3372 | <0.001 |
| HCC 159: Pressure Ulcer of Skin with Partial Thickness Skin Loss | 2,045 (2.6%) | 859 (2.6%) | 2,904 (2.6%) | -0.5037 | <0.001 |
| HCC 161: Chronic Ulcer of Skin, Except Pressure | 3,101 (3.9%) | 1,192 (3.6%) | 4,293 (3.8%) | -0.1744 | <0.001 |
| HCC 162, 163: Severe Skin Burn or Condition; Moderate Skin Burn or Condition | 100 (0.1%) | 68 (0.2%) | 168 (0.1%) | -0.2866 | 0.2065 |

| Risk Factor | Prevalence | | | Risk Adjustment Model Coefficients | |
|---|---|---|---|---|---|
| | FFS (N=80,089) | MA (N=33,541) | Total (N=113,630) | Coefficient | P-value |
| HCC 166, 167, 168: Severe Head Injury; Major Head Injury; Concussion or Unspecified Head Injury | 1,756 (2.2%) | 1,132 (3.4%) | 2,888 (2.5%) | -0.1635 | 0.0613 |
| HCC 169: Vertebral Fractures without Spinal Cord Injury | 1,973 (2.5%) | 991 (3.0%) | 2,964 (2.6%) | -0.0490 | 0.4401 |
| HCC 170: Hip Fracture/Dislocation | 997 (1.2%) | 520 (1.6%) | 1,517 (1.3%) | -0.2876 | 0.0015 |
| HCC 173: Traumatic Amputations and Complications | 983 (1.2%) | 677 (2.0%) | 1,660 (1.5%) | -0.1866 | 0.0241 |
| HCC 176: Complications of Specified Implanted Device or Graft | 3,784 (4.7%) | 1,886 (5.6%) | 5,670 (5.0%) | 0.0425 | 0.2900 |
| HCC 188: Artificial Openings for Feeding or Elimination | 6,331 (7.9%) | 2,971 (8.9%) | 9,302 (8.2%) | 0.0946 | 0.0035 |
| HCC 189: Amputation Status, Lower Limb/Amputation Complications; Amputation Status, Upper Limb | 1,891 (2.4%) | 747 (2.2%) | 2,638 (2.3%) | -0.1063 | 0.0488 |

Note: Includes LTCH stays eligible for the DTC-PAC measure from fiscal year (FY) 2023-2024. The FFS column represents statistics for stays that include only FFS claims. The MA column represents statistics for stays that include any Medicare Advantage encounter record.